

properly store and treat materials when necessary. Technical input will be solicited from Niagara Plant's technical staff which include chemical engineers and chemists. In the majority of the cases the materials spilled are compatible with the other materials in the area.

- 2) All specific emergency equipment listed in G-1.1.9 within this contingency plan is cleaned and fit for its intended use before operations are resumed.

The Environmental Engineer, under the auspices of the Plant Manager, will note in the operating record the time, date, and details of any incident that required implementing the contingency plan for Level A and B emergencies which involve hazardous waste. Within fifteen (15) days after the incident, he must submit a written report on the incident to the NYSDEC Commissioner. The report will include:

- 1) Name, address, and telephone number of Occidental Chemical Corporation
- 2) Date, time, and type of incident (e.g. fire, explosion)
- 3) Name and quantity of material(s) involved
- 4) The extent of injuries, if any
- 5) An assessment of actual or potential hazards to human health or the environment, where this is applicable
- 6) Estimated quantity and disposition of recovered material that resulted from the incident.

b) Spill Reporting

Per DEC and EPA regulations normally a one (1) pound discharge of hazardous waste to the environment will be reported to the National Response Center and to the Niagara County Health Department who act on behalf of the DEC in the County. A report will be filed with the County Health Department and distributed to the appropriate agencies. The report will describe the incident and remedial/preventative measures taken.

c) Procedures To Prevent Recurrence of an Event That Resulted in the Implementation of the Contingency Plan

To prevent recurrence of an incident that triggered implementation of the Contingency Plan, the event will receive a thorough review. The following key items will be covered in the review:

- 1) Incident description
- 2) What acts, failure to act and/or conditions contributed to the incident
- 3) What are the basic reasons for these acts and/or conditions
- 4) What corrective actions are required to prevent recurrence.

Corrective actions will identify the person/persons responsible for making any corrective action and a target date for completion.

Corrective actions will identify the person/persons responsible for making any corrective action and a target date for completion.

G-1.1.14 "SAFER" System

Occidental has an installed "Safer" system which is used as a tool for "real-time" emergency response to a vapor leak. Manufactured by SAFER Emergency Systems, Inc. in Westlake Village, California, the system is an on-line early warning computer which enables plant officials to quickly detect and track toxic or flammable vapors and advise whether an alert or evacuation of the plant and surrounding community is necessary.

In the case of a chlorine leak, sensors tied directly into the system automatically detect the ambient concentrations of the vapors and sound an alarm at the central station, thus alerting the plant operator. The plant operator then enters information into the system regarding type of chemical released and size of leakage. Wind direction, speed, temperature, and stability data, measured from a tower and sensors located on the plant site, are continuously fed into the system and automatically updated.

The system then quickly calculates the projected path of the vapor cloud and atmospheric dispersion rate of a specific chemical. This calculation of the cloud is displayed in different colors and superimposed over base maps of the plant and surrounding community. Should the wind direction change, the system will automatically shift the projection of the cloud to the new direction. Properties of the plant chemicals are already pre-programmed into the system so that density, dilution, and evaporation effects are taken into account in the on-going calculations. For dispersion modeling purposes approximately 25 plant chemicals are included into the Safer System program.

Should the release be a severe one, the print-out provides pre-planned instructions on whom to call and what to say. This includes telephone numbers, areas affected, evacuation routes, emergency procedures, and health effects from exposure to the vapors.

G-1.1.15 Warning System

The plant has an emergency warning system. Table G-4 describes the announcements heard and the recommended responses. It is composed of a speaker/warning tones. The system has emergency backup power and is tested on a weekly basis.

G-1.1.16 Remedial Wastes

In the event of any emergency involving remedial liquid wastes (fires, spills, etc.), OCC will follow the same procedures as described in this Contingency Plan for hazardous wastes. If

the remedial waste contains dioxin or PCBs, response personnel will be notified immediately. Local emergency response organizations have agreed to respond to emergencies involving NAPL and other OCC remedial waste. Appropriate response measures will be taken depending on the situation. Evacuation plans and routes will remain the same.

Cleanup and decontamination of equipment as the result of a spill of remedial waste will be carried out by personnel who have been trained in spill cleanup procedures. The procedures which will be followed are the same as described in this plan for hazardous wastes (Section G-1.1.12). When required, greater precautions may be necessary if the remedial waste contains dioxin. Material cleaned up from a spill will be drummed and labeled in accordance with regulatory requirements.

TABLE G-4
Emergency Alarms - Level A

<i>Situation</i>	<i>Alarm Sound</i>	<i>Action</i>
Plant Evacuation	Rapid Pulse	Shutdown: Assemble at E-3 or U-48/U-56
Community Impact	Steady Tone	Assemble for headcount as per emergency procedures
In-Plant Emergency	Slow Beep	Assemble for headcount as per emergency procedures
All Clear	Westminister Chimes	Resume normal activities

APPENDIX G-II

LOCAL EMERGENCY RESPONSE AGENCIES

LOCAL EMERGENCY RESPONSE AGENCIES

Local Fire Department

Niagara Falls Fire Department
Public Safety Building
Hyde Park Blvd.
Niagara Falls, New York 14302
911 or (716) 286-4545

Local Hospital

Niagara Falls Memorial Medical Center
Memorial Parkway
Niagara Falls, New York 14302
(716) 278-4000

Local Police

Niagara Falls Police
Public Safety Building
Hyde Park Blvd.
Niagara Falls, New York 14302
911 or (716) 286-4720

Local Emergency Contract Help

Chemical Waste Management
1550 Balmer Road
Model City, New York 14107
(716) 754-8231

State Police

New York State Police
4525 Witmer Road
Niagara Falls, New York 14305
(716) 297-0755

Sevenson Environmental

2749 Lockport Road
Niagara Falls, New York 14305
(716) 284-0341
On-site: (716) 278-7364

State Parks Police

Niagara Frontier State Parks Police
Niagara Frontier State Parks Commission
Administration Headquarters
Niagara Falls, New York 14301
(716) 278-1777

Niagara County Health Department

10th & East Falls Street
Niagara Falls, New York 14303
(716) 284-3128

Ambulance Service

Provided by Occidental
(Other ambulance services
readily available)

February 15, 1983

The attached letter was sent to the following people:

Sergeant Gary D. Brett
New York State Police
4525 Witmer Road
Niagara Falls, New York 14305

Lieutenant Lysle J. Newberry
State Parks Police
Niagara Frontier State Parks Commission
Administration Headquarters
Niagara Falls, New York

Chief Vincent Ciadella
Niagara Falls Fire Department
Public Safety Building
Hyde Park Blvd.
Niagara Falls, New York

Lieutenant Buchalski
Niagara Falls Police Department
Public Safety Building
Hyde Park Blvd.
Niagara Falls, New York

Mr. Ken Brando
Niagara Falls Police Department
Public Safety Building
Hyde Park Blvd.
Niagara Falls, New York

Jim Drabczyk
Safety Engineer - OCC

John Hartman
Security Director - OCC

Occidental Chemical Corporation

ATTHG.DOC
T29103
08/05/92

February 15, 1983

Dear

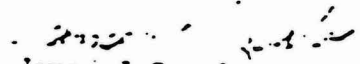
Re: RCRA and Emergency Plans

I would like to express my thanks for your cooperation, comments and attendance at a meeting which was held on Thursday, February 10, 1983, at Occidental's Niagara Plant located on Buffalo Avenue.

At the meeting we described hazardous waste activities and emergency plans for the facility. Each of you were given a copy of our emergency plan to familiarize yourself with facility emergency procedures. A list of participants is attached.

Should you have any questions, please contact me at 278-7534.

Respectfully yours,


James J. Czaplak
Supt. Environmental Control

JJC/cl
attachment

bcc: V Lloyd
R Simmington
C Blackley
J Drabczyk
J Hartman
G Schuur



HOOKER Industrial & Specialty Chemicals

P.O. Box 344 Niagara Falls New York 14302 Tel 219-2777

G029

Occidental Chemical Corporation

February 15, 1983

Dear

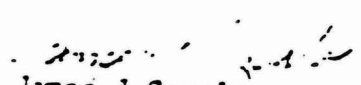
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JJC/ci
attachment

bcc: V Lloyd
R Simmington
C Blackley
J Drabczyk
J Hartman
G Schuur



HOOKER Industrial & Specialty Chemicals

P.O. Box 344 Niagara Falls, New York 14302 Tel. 219-7777

G030

RCRA MEETING WITH EMERGENCY AWARENESS

DATE: February 10, 1983

<u>NAME</u>	<u>TITLE</u>	<u>AGENCY</u>	<u>PHONE #</u>
James J Czapla	Supt Environmental Control	Occidental Chemical Corp	278-7534
Gary D Brett	Zone Sergeant/New York State Police	New York State Police	297-0755
Lysle J Newberry	Lieutenant	State Park Police	278-1777/78
Vincent Ciadella	Bn Chief	Niagara Falls Fire Dept	278-8218
Ken Brando		Niagara Falls Police Dept	278-8335
Ted Buchalski	Lieutenant	Niagara Falls Police Dept	278-8335
John Hartman	Security Director	Occidental Chemical Corp	278-7796
Jim Drabczyk	Safety Engineer	Occidental Chemical Corp	278-7536

GT031

ATHG.DOC
129103
08/05/92

RCRA MEETING WITH EMERGENCY AWARENESS

DATE: February 10, 1983

<u>NAME</u>	<u>TITLE</u>	<u>AGENCY</u>	<u>PHONE #</u>
James J Czapla	Supt Enviromental Control	Occidental Chemical Corp	278-7534
Gary D Brett	Zone Sergeant/New York State Police	New York State Police	297-0755
Lysle J Newberry	Lieutenant	State Park Police	278-1777/78
Vincent Ciadella	Bn Chief	Niagara Falls Fire Dept	278-8218
Ken Brando		Niagara Falls Police Dept	278-8335
Ted Buchalski	Lieutenant	Niagara Falls Police Dept	278-8335
John Hartman	Security Director	Occidental Chemical Corp	278-7796
Jim Drabczyk	Safety Engineer	Occidental Chemical Corp	278-7536

APPENDIX G-IV

TYPICAL EMERGENCY AND FIRE CONTROL EQUIPMENT

TYPICAL EMERGENCY EQUIPMENT LIST

(Subject to Change)

1. Sprinkler Systems

There are 86 sprinkler systems at the Niagara Plant.

2. Fire Hydrants

There are 85 hydrants located at the Niagara Plant.

3. Hose Houses

There are 68 hose houses at the Niagara Plant. There are also hose reels and racks located throughout the plant. These combined units are stocked with a total of 380 - 50 ft. lengths of fire hose.

4. Foam Stations

There are 5 fixed foam stations and 3 portable foam units in the Niagara Plant.

5. Purple K Units

We maintain 41 - 125 lb. wheeled units located throughout the plant.

6. Fire Extinguishers

We have approximately 1200 extinguishers permanently located throughout the Niagara Plant.

7. Scott Air Pak Maintenance

There are some 140 units in the Niagara Plant and all are maintained by the Fire Protection Group.

8. Explosimeters

Shift Foreman in each operating area have this device for checking on explosive conditions.

9. Absorbents (Speedi-dry, pads, Rolls, Soda Ash, Sodium Bicarbonate)

Materials are located in various areas. A stock is maintained in E-3 Stores/Warehouse.

10. Empty/Recovery Drums

Located in various areas.

11. Plastic Sheeting, Rope, Shovels, Boots, Gloves, Respirators

Located in E-3 Warehouse. Replaced automatically based on inventory.

12. Ladders

Located throughout the plant.

13. Vacuum Truck

Dispatched from E-3.

14. Flat Beds

Dispatched from E-3.

15. Front End Loader

Dispatched from Department E-3 and Area 4.

16. Tank Trucks, Pickups, Tandems, Forklifts

Dispatched from E-3.

17. CERP Vehicle contains:

Acid suits
Air horn (tank entry)
Alcohol (for cleaning gas masks) - 1 bottle
Airplane clamps
Coveralls
Chlorine manuals
Caustic manuals
Cotton gloves - 3 dozen
Chisels
Copper tubing compression fittings
Chlorine valves - 1" and 1-1/2"
Chlorine canisters and extra hoses
CERP van jack and lug wrench
Dust masks - 1 dozen
D & L hand soap - 1 can
Electrical tape - 3 rolls
Eye glass cleaner
Emergency eye wash fountain
Face shields - 3
Flashlights and extra batteries
Flaring tools - 1 set
Fluoralube grease - 1 can
Full face mask and extra canisters - 3
Fire extinguisher - 1
Flags (barricade) - 1
Grease (tube for grease gun) - 1
Grease gun - 1
Grease (pipe type)
Garbage bags
Gaskets for caustic tank cars
Hard hats - 3
Hazardous Material manuals (DOT)
Kimwipes - 2 boxes
Love Canal handouts
Lead wool - 50 lbs.
Masking tape - 3 rolls
N²O regulatore - 1
Pesco hoods - 6
Portable pipe vise - 1
Pipe threads - 1 set 1/4" to 2"
Penetrating oil - 2 cans
pH paper - 4 packs

Putty knives - 4
Pipe cutter - 1
Paper cups - 2 dozen
Pipe wrenches
Pressure gauges - 0 to 200 lbs. - 6
Paint brushes - 1
Unions - 3000 lb. test (12)
Rain suits and pants
Rubber gloves - 2 dozen
Railroad blue flashers and extra batteries - 1
Rupture disc for caustic tank cars
Rope
Scott air paks
Spotlight (portable) and extra batteries - 1
Spray paint (black and white) - 1 can each
Silicone spray - 1 can
Spare tire (for CERP truck)
Shoe knives - 1 dozen
Scott towels - 3 rolls
Tingley boots and rubbers
Tank car angle valve wrenches - 2
Toilet paper - 3 rolls
Tank car wheel chocks - 2
Tank car angle valve packing wrenches - 3
Water jug
Wire brushes
Wheel chocks for CERP truck - 2
180' of copper tubing for chlorine tank car transfer
Chlorine valves (1" and 2")
50' 1/4" copper tubing
200' 1/2" extra heavy 1" pipe
130' of extra heavy 1" pipe

18. Safety Van contains:

Acid suits - 4
Rubber suits - pants - 6
Rubber suits - jackets - 6
Coveralls - 6
Visitor goggles - 12

Mono goggles - 6
Rubber gloves - 6

Boots - 6
Blankets - 3
Rescumatic - 1
Bull horn - 1
Stretchers - 2
Safety belts - 3
Wristlets - 2
Rope - 1
Wire cables - 2
Bolt cutters - 1
Extractor kit - 1
Pick poles - 1
Barricade cones - 4
Cone adaptors - 4
60 foot banner tapes - 10
24 x 24 red flags - 6
Red flags with clamps - 6
Flashing lights - 4
1-1/2" fire hose - 4
1-1/2" fire nozzles - 2
2-1/2" x 1-1/2" hose adaptors - 2
Hydrant wrenches - 2
Extension cord lights - 2
Extension cords - 2
Explosion-proof lights - 2
Canisters - 3
Mouth masks - 10
Full face masks - 3
Scott air pak - 4
Air chisel - 1
Pasco hood - 6
Face shield - 4

19. Empty 6000 pound capacity lined storage bags located in the Bag Storage Buildings. A stock will be maintained.
-

FIRE CONTROL EQUIPMENT **HAZARDOUS WASTE UNITS**

	Type of Fire
1. <u>Liquid Waste Incinerator, Bldg U-67, and tank T-20 Extinguishers</u>	
A. Fire Hose House - North side of U-87	
B. Fire Hydrants	
1) North of U-67	
2) South of U-67 Water Tank Farm	
3) South West of U-87	
4) West of U-76	
C. Fire Hose - Inside Bldg U-76	
D. Purple K Unit - North side of U-87	
E. Fire Extinguishers	
1) 2 - Inside building U-87	BC
2) 2 - Inside building U-76	BC
3) 1 - South outside of building U-67	
4) 9 - Inside building U-67	
a) 6 - Basement to 3rd floor, NE stairwell	BC
b) 4 - Basement to 3rd floor, SE stairwell	BC
c) 1 - 4th floor NE stairwell	BC
5) 1 - 2nd deck of residue storage tank area	BC
2. <u>N-Area Pad - Container Storage</u>	
A. Fire hydrant and hose house 30 ft. W.	
B. Purple K 40 ft. N.	
C. Fire extinguishers 40 ft. S.	BC
D. Fire water divisional valve #81 South side of pad	
3. <u>M-Area Pad - Container Storage</u>	
A. Fire hydrant and hose house 50 ft S.	
Fire hydrant and hose house 25 ft E.	
Fire hydrant and hose house 75 ft N.W.	
B. Purple K 75 ft N.W.	
C. Fire extinguisher 50 ft S.	BC
D. Fire emergency alarm 50 ft S.	

Type of Fire

4. C-Area Pad - Container Storage
 - A. Purple "K" 150 ft N.E.
 - B. Fire extinguisher 50 ft N.
Fire extinguisher 75 ft N.
5. N-6 MCT Residue Tank - Tank #8
 - A. Fire hydrant and hose house 10 ft N.
 - B. Purple K 25 ft W.
 - C. Fire extinguisher 30 ft S.

BC
6. M-22 Mixed Residue Tank - Tank #9
 - A. Fire hydrant and hose house 100 ft N.
 - B. Purple K 60 ft N.
7. Dech Plus Residue Tank (Inside Bldg. M-22) - Tank #19
 - A. Fire extinguisher 70 ft S. (in stairwell)
Fire extinguisher 45 ft n> (in stairwell)

BC
BC
8. T-Area and U-Area North Storage Units
 - A. Fire hydrants and hose house (maximum 150 ft N. of T-Area unit)
Fire hydrants approximately 50' north and 50' east of bldg U-91
 - B. Fire extinguishers (in buildings)
 - C. Bag Storage Buildings (6 each side wall; 12 total per bldg) 4A40
 - D. Drum Storage Buildings (4 each side wall; 8 total in bldg) 4A40

BC
BC

APPENDIX G-V

NIAGARA PLANT EVACUATION ROUTES (MAP EV)



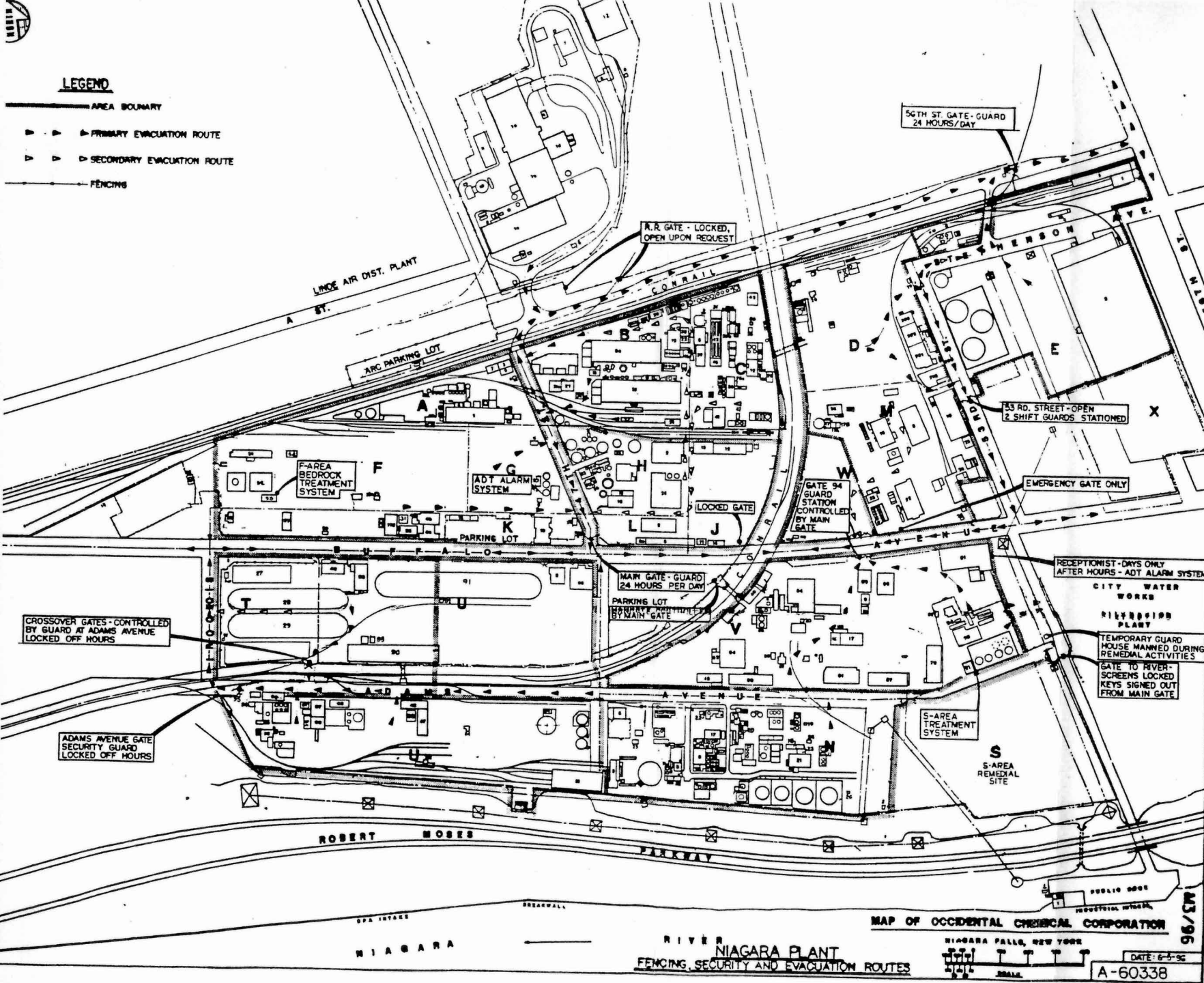
LEGEND

AREA BOUNDARY

PRIMARY EVACUATION ROUTE

SECONDARY EVACUATION ROUTE

FENCING



MAP OF OCCIDENTAL CHEMICAL CORPORATION

NIAGARA FALLS, NEW YORK

NIAGARA PLANT
FENCING, SECURITY AND EVACUATION ROUTES

DATE: 6-5-92

A-60338

G042

APPENDIX G-VI

AGREEMENT WITH A LOCAL EMERGENCY RESPONSE COMPANY



July 1, 1996

James J. Czapla
Occidental Chemical Corp.
Niagara Plant
4700 Buffalo Avenue
Niagara Falls, NY 14302

Regarding: **Emergency Response**

Dear Jim:

We are pleased to inform you that Sevenson Industrial Services, Inc. has emergency response capabilities and would respond day or night with manpower and equipment to handle a wide variety of situations.

The telephone numbers are as follows:

Day	716-284-0431
Night	716-284-0461

If you have any questions, please contact us.

Sincerely,

Sevenson Industrial Services, Inc.

A handwritten signature in cursive script, appearing to read 'Gary Rose', is written over the typed name.

Gary Rose
Project Manager

GR/mary
cc: File

ATTACHMENT H - CLOSURE PLAN AND FINANCIAL REQUIREMENTS

(Cost Estimate updated annually in accordance with 6NYCRR 373-2.8)

Last Updated:

Closure Plan: 8 - July - 99

Cost Estimate: 8 - July- 99

(Today we are re-estimating the Cost of Closure based on new NYSDEC comments to our 1997 RCRA Permit Renewal Application. 1997 Costs x 1.028 x 1.009 Implicit Price Deflators will be used. We have removed Building U-91 from this version as it is now closed.)

H.1 CLOSURE PLAN AND COST ESTIMATE

1.1 Estimated Final Closure Date

The estimated Final Closure Date for all Hazardous Waste Facilities at the Niagara Plant will be December 14, 2025. However, as these waste facilities are an integral part of the Niagara Plant's Production Facilities, this estimated Final Closure Date may be changed and extended into the future. Modifications to this Final Closure Date will be made as specified in 373-2.7(c)(2).

As required by 6NYCRR 373-2.8, the Closure Cost Estimate and the Financial Assurance Instrument will be adjusted annually.

1.2 Closure Performance Standard

At closure, all hazardous waste will have been removed from all waste handling systems and disposed of properly. All vessels and ancillary equipment will be decontaminated, wipe tested, cut-up and sent to a Subtitle D landfill. Some vessels may be scrapped or reused if found to be in good shape.

In any event, all costs will be calculated as if all the tanks were sent for disposal.

All outdoor sumps, spill control dikes, and vessels for landfilling, scrapping or reuse will be high pressure water cleaned for decontamination purposes. The bag buildings T-28 will also be decontaminated by washing.

Decontamination will be varified using standard wipe test methods for the OCC organics managed there. Decontamination will be varified on the PCDD/F equipment and buildings using a special wipe test that has been approved for the PCDD/F Storage Areas. (See Appendix G attached)

It is anticipated that the Aluminum support structures for building T-28 will be decontaminated sufficiently to allow them to be scrapped to recycle the aluminum.

In any event, all closure costs have been calculated as if the aluminum had to be sent to a Subtitle D landfill.

As the Bag Storage Buildings did not store liquids, it is anticipated that the asphalt pads under them will only have surface contamination and should be decontaminated during the high pressure washing step specified. Thus OCC expects these pads will be left in place once decontamination is varified. Should they be found to be contaminated, they will be excavated and incinerated in the incineration unit used to treat the waste stored in these buildings.

After shutdown, the liquid incinerator's refractory will be analyzed via the TCLP Method to determine if it has become hazardous. PCB & TCDD/F wipe testing will also be done to determine if these compounds remain and further decontamination is required. If the refractory is not hazardous, the materials from the reactor and the scrubber will be sent to a Subtitle D Landfill. If found hazardous, the materials will be disposed in a Subtitle C Secure Landfill.

The Niagara Plant Facility does not treat, store or dispose of hazardous waste in Surface Impoundments, Waste Piles, Land Treatment Units or Landfills onsite. Consequently, Sections 373-2.7(g) & (i) and Sections 373-3.8(e) & (f) (which concern Post Closure Care) are not applicable.

At closure, all wastes will be removed from the exempt Waste Water Treatment Units and disposed of properly.

Partial Closures of Hazardous Waste Facilities that are shutdown prior to the Estimated Date of Final Closure will be done by following the appropriate steps, as outlined in this Closure Plan, for that facility or piece of equipment. Notification of partial closure will be made per 373-2.7 (c)(3).

1.3 Maximum Waste Inventory

The maximum waste inventory that could be in storage or treatment at any one point during the life of the facility would be:

1. TOTAL BULK LIQUID WASTES	ORGANIC	WATER	NaOH
a) Remote Residue Storage Systems			
1) Area Portable Residue Tanks	1,200		
2) Area Residue Storage Tanks	11,500		
3) Area Residue Storage Tank Spill Control Dikes & Sumps		66,575	
b) Residue Incinerator Areas			
1) Residue Trailers	83,700		
2) Residue Storage Tanks	65,000		
3) Residue Storage Tank Spill Control Dikes & Sumps		119,759	
4) NaOH Storage Tanks			6,000
c) Residue Drum Storage Areas Pad Containment & Sumps		12,426	
d) T-Area & U-90 Storage Areas Pad Containment & Sumps		15,280	
 BULK LIQUID TOTALS IN GALLONS	 161,400	 214,039	 6,000
2. TOTAL BULK SOLID IN CU YDS	20000 cu yds in T-28 2500 cu yds in T-Area Rolloffs (1320 tons)		
3. TOTAL WASTE IN CONTAINERS	6760 drums max. total or 6744 drums + 4 portable tanks.		

The Maximum PCDD/F inventory stored in containers included in the above is,

20,000 cu yds in bags in Blds. T-28,
2,500 cu yds in rolloffs on the T-Area Rolloff Storage Pad (1320 tons),
14,000 gallons (15,000 gallons Permitted) in residue trailers at the liquid incinerator and
6,096 drums stored in U-90.

The Maximum PCDD/F inventory stored in tanks included in the above is

65,000 gallons stored in tanks T-1 thru T-6 & T-20 at the Residue Incinerator.

NOTE: The actual waste inventory at the time of closure should be considerably less than indicated above.

1.4 Closure Master Plan and Schedule

Inventory removal, disposal and decontamination procedures are discussed in detail in the following combined "SPECIFIC CLOSURE PLAN / COST ESTIMATE" (Section 1.5). As required, Occidental will notify the Commissioner at least 180 days before the expected date that the Closure will begin. This 180 period will be used to review the Closure Plan, secure contractor manpower and equipment and assign job responsibilities as needed.

All accumulated waste will be processed or shipped offsite within 90 days of receipt of the final waste volume and all closure activities will be completed within 180 days.

Note: It is anticipated that a time extension will be required and may be requested at the time of Closure because of the large volume of remedial wastes currently stored in the T-Area & U-Area North Storage Facilities and due to capacity constraints of the off-site solids incinerators. It is estimated that approximately:

89 days will be required to ship all the waste stored in these Facilities.

167 days will be needed to complete all closure activities in these Facilities.

Total Est. Closure Costs

I.	Remote Residue Storage Tanks	\$325,805
II.	Liquid Residue Incinerator Systems	\$1,342,148
III.	Residue Drum Storage Areas	\$109,782
IV.	T-Area, U-90 & U-91 Storage Facilities	\$15,421,620
		<hr/>
		\$17,199,355

The sequence of steps and the schedule of days required to complete each step follows on the next page.

CLOSURE STEPS

I. REMOTE RESIDUE STORAGE TANKS

1 EMPTY AND SHIP CONTENTS TO INCINERATOR	6 DAYS
2 EMPTY SUMPS	7 DAYS
3 EMPTY THE PORTABLE TANKS	2 DAYS
4 CLEAN SLUDGE FROM TANKS & SUMPS	12 DAYS
5 DECONTAMINATE ALL TANKS & SUMPS	8 DAYS
6 DISMANTLE ALL PIPE & ANCILLARY EQUIPMENT	6 DAYS
7 CUT UP TANKS & PORTABLE TANKS & DISPOSE	4 DAYS

II. INCINERATOR SYSTEMS

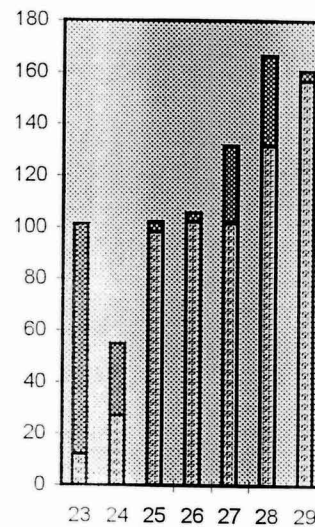
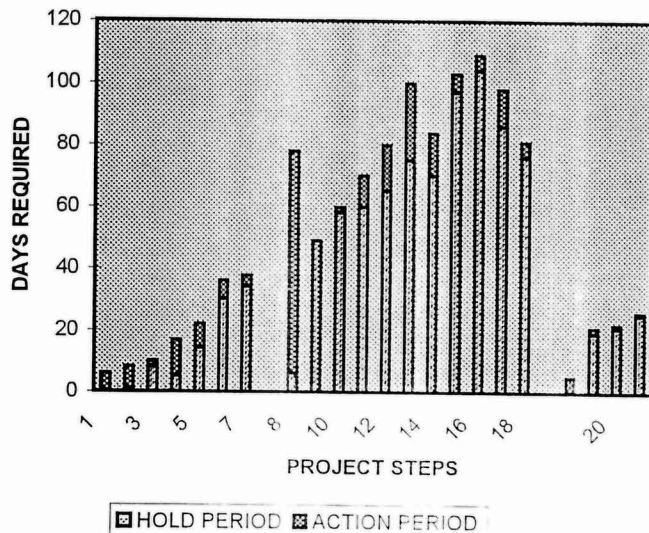
8 INCINERATE LIQUIDS ON-HAND	72 DAYS
9 CLEAN SLUDGE FROM TRAILERS & TANKS	0 DAYS
10 STRIP INSULATION FROM TANKS	2 DAYS
11 DECONTAMINATE ALL PCDD/F TANKS & TRAILERS	10 DAYS
12 HIGH PRESSURE WASH ALL TANK & TRAILERS	15 DAYS
13 CUT UP ALL TANKS & TRAILERS	25 DAYS
14 DISMANTLE ALL PIPE & ANCILLARY EQUIPMENT	14 DAYS
15 DEMOLISH THE INCINERATOR & EXHAUST PIPE	6 DAYS
16 DEMOLISH THE IWS SYSTEMS	5 DAYS
17 CLEAN ALL SPILL CONTROL DIKES & SUMPS	12 DAYS
18 NEUT. THE CAUSTIC STORAGE CONTENTS & FLUSH	5 DAYS

III. PLANT CONTAINER STORAGE AREAS

19 DISPOSE OF THE DRUMS	5 DAYS
20 REMOVE WATER FROM THE SUMPS	2 DAYS
21 CLEAN THE SLUDGE FROM SUMPS	1 DAYS
22 HIGH PRESSURE WASH THE PADS & SUMPS	1 DAYS

IV. T-AREA & U-AREA NORTH (U-90) STORAGE FACILITIES

23 SHIP / DISPOSE THE REMEDIAL WASTE	89 DAYS
24 PRESSURE WASH, CUT-UP & DISPOSE OF THE ROLLOFFS	28 DAYS
25 EMPTY ALL SUMPS & TRENCHES	4 DAYS
26 PRESSURE WASH THE PADS, SUMPS & STRUCTURES	4 DAYS
27 VERIFY DECONTAMINATION (WAIT RESULTS)	30 DAYS
28 DISMANTLE BAG STORAGE FACILITIES (FABRIC BLDG.)	35 DAYS
29 DIG-UP THE BAG STORAGE BUILDING PADS & INCINERATE	4 DAYS



1.5 Specific Closure Plans & Cost Estimates - Updated: 07-Jul-99

I. REMOTE RESIDUE STORAGE TANKS - SPECIFIC CLOSURE PLAN

A. Close all Remote Organic Residue Storage Tanks & Spill Control Dikes

1. Pump all tanks dry and incinerate at an approved incinerator.
2. Empty all containment sumps of water and Treat. (assume 100% full as worst case - Empty normally)
3. Pump all portable residue tanks dry and incinerate liquids.
4. Clean sludge from all tanks & sumps. Drum for incinerator. (Use Vac Truck)
5. Decontaminate all tanks, sumps, piping and ancillary equipment with OCT & high pressure water.
6. Verify that the tanks, piping, sumps & portable tanks are decontaminated using Wipe Samples
7. Dismantle all piping and ancillary equipment. Send to Subtitle D Landfill as they are decontaminated.
8. Cut up the tanks and dispose in a Subtitle D Landfill as they also are decontaminated.

B. Professional Certification

1. Number of person hours required for inspections.
 - a. Burn all liquid wastes = 4 hours at the incinerator = 4 hours
 - b. Clean sludge from the tanks & sumps and incinerate = 1 hour / day x 12 days = 12 hours
 - c. Flush tanks with OCT = 2 hours to inspect procedures = 2 hours
 - d. High press. water clean the tanks & sumps to inspect procedures and results = 1 hour / day x 8 days = 8 hours
 - e. Treatment of wash water at WWTP = 1 hours
 - f. Inspecting and Verifying Wipe Test Procedures = 0.5 hour / test x 12 tests = 6 hours
 - g. Dismantle, cut up and landfill all tanks and all pipe. = 1 hour at landfill & 2 hrs to inspect cutting = 3 hours

36 hours

2. Technical Hours for administrative duties and clerical work assume 1 hr/day administrative & 1/2 hr/day clerical : (see schedule for the days required)

$$38 \text{ days} \quad \times 1.5 \text{ hrs/day} \quad = \quad 57 \text{ hours}$$

C. Cost Summary

- | | |
|---|---------------|
| 1. Close all remote Organic Residue Storage Areas | \$246,113.49 |
| 2. Professional Certification | \$4,505.82 |
| | <hr/> <hr/> |
| | \$250,619.32 |
| 3. Administration cost. (assume 15% of 1 & 2 above) | = \$37,592.90 |
| 4. Contingency cost. (assume 15% of 1 & 2 above) | = \$37,592.90 |

D. TOTAL COST FOR CLOSURE OF THE REMOTE RESIDUE STORAGE AREAS

\$325,805.11

II. LIQUID RESIDUE INCINERATOR SYSTEMS - SPECIFIC CLOSURE PLAN

- A. Incinerate all liquids in the trailer fleet and the incinerator tanks. Burn 3000gal Fuel Oil to Decontaminate the Incinerator and APC Equipment.
- B. Clean sludge from all trailers and tanks and drum and incinerate. (Use Vac Truck)
- C. Decontaminate then cut up and landfill all tanks and residue trailers.
1. Strip all insulation from the T-4 Heated Storage & Secure Landfill
 2. Decontaminate all tanks and trailers by flushing with OCT and high pressure water washing.
 3. Verify decontamination of all vessels using GC analysis of wipe samples.
 4. Cut up and dispose all Tanks & Trailers (assume 1 vessel / day)
- D. Dismantle all piping and send to Subtitle D Landfill disposal.
- E. Demolish the Liquid Incinerator and the IWS Systems
1. Verify the Reactor is non-hazardous. using TCLP Methods. (One composite sample from each reactor)
 - a. use TCLP Methods on one composite sample from the Reactor.
 - b. Also verify the Reactor is not PCB & PCDD/F contaminated using wipe test methods.
 2. Demolish both the Reactor and Reactor Exhaust Piping and dispose.
 3. Demolish the Quench & Absorber/Condenser Towers, the Condenser Cooler and the IWS Systems.
- F. Empty all sumps and spill control dikes, treat water & high pressure clean and verify decontamination using wipe samples..
- G. Neutralize caustic in caustic storages & flush tank with City Water.

H. Professional Certification

1. Number of person hours required for inspections.
 - a. Burn all liquid residue at an approved Incinerator. = 4 hours at the incinerator = 4 hours
 - b. Clean sludge from all tanks & trailers and Incinerate. = 2 hours to review procedures = 2 hours
= 2 hours at the Solids Incinerator = 2 hours
 - c. Decontaminate, cut up and landfill all Vessels = 2 hrs review of procedures = 2 hours
= (0.5 hr / tank x 25 tanks) = 12.5 hours
 - d. Dismantle all pipe & equipment and dispose = 1 hr / day x 14 days = 14 hours
 - e. Demolish the liquid incinerator and the IWS system = 2 hrs review of procedures = 2 hours
= 1 hr / day x 11 days = 11 hours
 - f. Empty and High Pressure clean all Sumps = 1 hr/day x 12 days = 12 hours
= 1 hr at WWTP = 1 hours
 - g. Neutralize Caustic = 2 hrs review of procedures = 2 hours
= 0.5 hr/day x 5 days = 2.5 hours
67 hours
2. Technical Hours for administrative duties and clerical work assume 1 hr/day administrative & 1/2 hr/day clerical :
(see schedule for days required) 109 days x 1.5 hrs/day = 163.5 hours

I. Cost Summary

1. Burn all liquid residues	=	\$724,158.74
2. Clean sludge from all Vessels and incinerate	=	\$739.48
3. Decontaminate then cut up and landfill all tanks & trailers	=	\$194,137.37
4. Dismantle the ancillary pipe & equipment and dispose	=	\$15,224.22
5. Demolish the reactors & scrubber and dispose	=	\$38,914.26
6. High pressure clean all sumps & dikes	=	\$46,157.68
7. Neutralize all caustic in storage & dispose	=	\$3,512.77
8. Professional Certification	=	\$9,576.95
	TOTAL	\$1,032,421.47
9. Administration cost. (assume 15% of 1 thru 8 above)	=	\$154,863.22
10. Contingency cost. (assume 15% of 1 thru 8 above)	=	\$154,863.22

\$1,342,147.91

J. TOTAL CLOSURE COST RESIDUE INCINERATOR SYSTEMS

III. RESIDUE DRUM STORAGE AREAS - CLOSURE

- Dispose of all stored drum waste (assume all pad 100% full as worst case)
- Treat all water in sumps and pads
- Remove sludge from sumps. Drum and dispose (use Vac Truck).
- High pressure clean all sumps & pads and verify decontamination
- Clean the Vac Truck and verify decontamination
- Professional Certification

1. Number of person hours required for inspections.				
a. Dispose of all present drums and pallets	=	2 hours at the Landfill	=	2 hours
b. Treat all the water in the sumps and pads	=	= 1 hour at the WWTP	=	1 hour
c. Remove sludge from sumps and dispose	=	= 1 hr/sump x 3 sumps	=	3 hours
d. High Pressure clean all sumps and pads	=	= 1 hr/day x 1 days	=	1 hours
e. High Pressure clean the Vac Truck	=	= 1 hour to verify results	=	1 hour
				8 hours

2.	26 days	x 1.5 hrs/day	=	39 hours
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G. Cost Summary

1. Dispose of all present drums and pallets	=	\$67,730.58
2. Treat all water in the sumps and pads	=	\$4,490.72
3. Remove sludge from all sumps and dispose	=	\$3,826.14
4. High pressure clean all sumps and pads	=	\$4,163.70
5. High Pressure clean the Vac Truck	=	\$2,688.98
6. Professional Certification	=	\$1,547.58
	TOTAL	\$84,447.70
7. Administration cost. (assume 15% of 1,2,3,4,5 above)	=	\$12,667.15
8. Contingency cost. (assume 15% of 1,2,3,4,5 above)	=	\$12,667.15

\$109,782.01

H. TOTAL CLOSURE COST RESIDUE DRUM STORAGE SYSTEMS

III 007

IV. T-AREA & U-AREA NORTH STORAGE FACILITIES

- A. Dispose of all stored drums, bags and containerized debris by third party incineration.
B. Decontaminate all T-Area Rolloffs and Dispose in Subtitle D Landfill as they are decontaminated.
C. Empty all Sumps and Trenches
D. High Pressure Clean Sumps, Trenches and Structures via high pressure washing and varify decontamination by wipe test methods.
E. Dismantle Bag Storage Buildings
F. Dig up the asphalt pads in the bag buildings and incinerate.
G. Professional Certification

(assume all structures and pads are 100% full as worst case)

1. Number of person-hours required for inspections.				
a. Dispose of present drums, pallets, and bags	= 4 hours at disposal facility + 4 hours at the Landfill	=	8	hours
b. High-pressure wash & cutup the Rolloffs	= 2 hours at the WWTP	=	2	hours
	= 1 hour/day x 28 days	=	28	hours
	= 2 hours at the lab to review procedures	=	2	hours
c. Empty Sumps & Trenches	= 1 hour per building or pad	=	6	hours
d. High-pressure wash pads, sumps and structures	= 1 hour/day x 4 days	=	4	hours
e. Dismantle all Structures	= 4 hours/day x 35 days	=	35	hours
f. Dig-up & incinerate asphalt pads in the bag buildings	= 1 hour per day x 4 days	=	4	hours
			<u>89</u>	hours
2. Technical Hours for administrative duties and clerical work assume 1 hr/day administrative & 1/2 hr/day clerical . (see schedule for days required)	167 days x 1.5 hrs/day	=	250.5	hours

H. Cost Summary

1. Dispose of all present drums, bags and rolloff debris	=	\$9,719,193.84
2. Decontaminate and cut up all T-Area & U-Area rolloffs	=	\$65,214.50
3. Empty all Sumps and Trenches	=	\$6,586.11
4. High pressure clean all pads, sumps and structures	=	\$66,361.02
5. Dismantle all the Bag Storage Buildings	=	\$99,327.25
6. Dig-up & incinerate the Bag Storage Building Pads	=	\$1,892,689.18
7. Professional Certification	=	\$13,412.71
	TOTAL	<u>\$11,862,784.61</u>
8. Administration cost. (assume 15% of 1 thru 6 above)	=	\$1,779,417.69
9. Contingency cost. (assume 15% of 1 thru 6 above)	=	\$1,779,417.69

I. TOTAL CLOSURE COST T-AREA & U-AREA NORTH STORAGE FACILITIES

\$15,421,619.99

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1-1

ATTACHMENT I
ENGINEERING DRAWINGS

ATTACHMENT I - ENGINEERING DRAWINGS

The following engineering drawings submitted with the Occidental Chemical Corporation Part 373 permit application are incorporated by reference into this permit. The actual drawings can be found in the three drawings binders (Volumes 5, 6 and 7). Changes to the following engineering drawings which do not affect the management of wastes under the terms of this permit may be made without a permit modification after approval is received from the Department.

PART I - FACILITY DESCRIPTION DRAWINGS (Volume 5)

<u>Drawing No.</u>	<u>Title</u>	<u>Date</u>
Map I	Location/Topo. Map of HWM Facilities	7/96
(A-60338)	Fencing and Security	2/2/89
BB-56042	Fire Hydrant Locations	5/19/92
A-54425	Residue Transfer Tank & Skid	11/5/80

PART II - CONTAINER STORAGE AREA DRAWINGS (Volume 5)

<u>Drawing No.</u>	<u>Storage Area(s)</u>	<u>Date</u>
A-56365	F, M, C, U	9/87
A-56349	M, C	5/92
A-11-18247	N	6/87
A-58956	U-67	06/90
A-58959	U-67	04/20/89
A-58960	U-67	04/20/89
A-11-3901	M-22	05/01/92
A-11-4680	M-22	09/11/72
A-11-4685	M-22	09/11/72
A-11-20677	T	10/89
A-11-22860	U-90	04/16/92
A-11-22861	U-90	04/16/92
A-11-22862	U-90	04/16/92
A-11-22863	U-90	04/16/92
A-11-22864	U-90	04/16/92
A-11-22865	U-90	04/16/92